DOCUMENT RESUME

ED 080 192 PS 006 713

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TITLE Piaget-Based Curriculum for Early Childhood Education: The Kamii-DeVries Approach.
PUB DATE 1 Apr 73
NOTE 8p.; Part of a pre-symposium paper presented at the biennial meeting of the Society for Research in Child Development (Philadelphia, Pennsylvania, April 1, 1973)

EDRS PRICE MF-$0.65 HC-$3.29
DESCRIPTORS *Cognitive Development; *Early Childhood Education; *Educational Objectives; Emotional Development; Instructional Materials; *Personality Development; Preschool Curriculum; Social Development; Teacher Role; *Teaching Methods
IDENTIFIERS Piaget

ABSTRACT

An outline for Piaget-based early childhood education curricula is presented. Long term objectives of the curriculum are the facilitation of moral and social growth, and intellectual development leading to formal operational functioning. Education is seen as a process that encourages creative and critical thinking. Short-term objectives are listed in categories of socio-emotional and cognitive development. The model is based on the traditional child development curriculum, with three major differences: (1) thinking is emphasized rather than factual knowledge or sensory learning; (2) the principles of teaching are modified to encourage an active environment, self-initiation of activity, problem-solving directly from physical objects, and the freedom to be "wrong" so that correct answers can be self-discovered; and (3) the role of the teacher is to create the environment where these learning activities will naturally take place. A specific activity is described and discussed in terms of its rationale, or the cognitive processes involved in its participation. (DP)

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# Piaget-Based Curricula for Early Childhood Education: The Kamii-DeVries Approach*

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## I. Conceptualization of objectives

Note: The following objectives are different from those conceptualized earlier (Kamii, 1971, 1972a, 1972b; Kamii & Radin, 1967, 1970; Sonquist & Kamii, 1967; Sonquist, Kamii, & Derman, 1970). Earlier conceptualizations were too compartmentalized and based on parallels drawn too closely with Piaget's theoretical framework.

### A. Long-term objectives

1. Moral and social development (autonomy)
2. Intellectual development (formal operations)

Short-term objectives must be conceptualized within the context of long-term goals. As Piaget (1972) states, the goal of education is the development of the whole personality, including moral and social development, ego development, and intellectual development.

These objectives clearly go beyond, and to some extent counter to, the goal of success in school (as currently evaluated). To quote Piaget (1964),

> The principal goal of education is to create men who are capable of doing new things, not simply of repeating what other generations have done - men who are creative, inventive, and discoverers. The second goal of education

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*Part of a pre-symposium paper to be presented at the biennial meeting of the Society for Research in Child Development, Philadelphia, April 1, 1973.

> is to form minds which can be critical, can verify, and not accept everything they are offered. The great danger today is of slogans, collective opinions, ready-made trends of thought. We have to be able to resist individually, to criticize, to distinguish between what is proven and what is not. So we need pupils who are active, who learn early to find out by themselves, partly by their own spontaneous activity and partly through material we set up for them; who learn early to tell what is verifiable and what is simply the first idea to come to them (p. 5).

B. Short-term objectives

1. Socioemotional development: For the child

   a. To feel secure in his relationships with teachers;

   b. To respect the feelings and rights of others and begin to coordinate different points of view (decentering and cooperating). (This objective applies to how the child deals with interpersonal conflicts. We try to get children to argue openly about their differences so that they will come to see the other person's point of view.);

   c. To be mentally active and curious and to use initiative in pursuing curiosities;

   d. To have confidence in his ability to figure things out for himself and speak his mind with conviction;

   e. To enjoy both companionship and play with others and playing alone.

   f. To cope constructively with fears and anxieties and not be easily traumatized.

2. Cognitive development: For the child actively to use his intelligence

   a. To figure out means to achieve desired ends and to think about (eventually coordinate) similarities, differences, and relationships;

   b. To come up with problems and questions of his own.

Note: We could get more technical, but the above outlines the broad objectives within which the parts fit.

C. Universality of objectives

We consider these objectives to be universal in one sense and not in another sense. They seem universal in the sense that every human being, regardless of the culture in which he lives, develops a logico-mathematical framework, spatio-temporal framework, physical knowledge, social-arbitrary knowledge, and some kind of morality and personality. The specific content may vary from one culture to another, but the basic framework is universal. On the other hand, educational objectives based on Piaget's theory do not seem to be appropriate if we have to educate children to adapt to a coercive environment.

D. The issue of cognitive processes vs. content (factual information)

It seems to us that even though many people talk about the importance of process, we need to worry much more about it than we do. The most important lesson Piaget taught us was that preoperational children think in ways that we could not possibly imagine by sitting in our offices and labs. Really listening to children and tuning in to their way of thinking is very difficult. We find that even the best and most sensitive teachers trained in the child-development tradition give content to young children that is impossible for them to assimilate.

II. Conceptualization of teaching methods

A. General approach

Piaget emphasized the importance of the child's being mentally active.

He also delineated four factors to explain development. They are,

1. Maturation in a biological sense
2. Experiences with objects (which involve both physical experience and logico-mathematical experience)
3. Experiences with people (including social transmission)
4. Equilibration.

Generally, the kind of classroom which maximally enables all of these factors to play a part seems to us to be the traditional child-development classroom. The experience of traditional nursery-school teachers in working closely with young children brought them to the conclusion that good activities are those in which children spontaneously involve themselves intensely, such as sociodramatic play, art, block building, music, games, stories, and raising animals. However, in our opinion, these educators have not been able to explain in a precise way <u>why</u> these activities contribute so ideally to children's socioemotional and cognitive development. Piaget's theory provides a theoretical rationale for the child-development curriculum which has been defended heretofore mostly for intuitive and socioemotional reasons.

Our curriculum thus looks very much like a traditional child-development program, but there are three important differences. First, we emphasize thinking. Specific information and sensory learning recede in importance in our curriculum, and thinking comes to the forefront. Physical knowledge activities are emphasized as being particularly important because they provide the ideal context for thinking—figuring things out, thinking about similarities, differences, and relationships, and structuring space. In this connection, we do not disagree with the

child-development teachers that young children learn through their senses. However, we believe that this view is highly incomplete, as it overlooks the importance of children's actions on objects. Children have to act on objects in many different ways, and it is the objects' reactions to these actions that are perceived through the senses. Group games also occupy an important place in our curriculum because they motivate children to coordinate points of view, figure out strategies, and compare outcomes.

The second difference with the child-development program involves principles of teaching ("B" below). The third difference concerns the teacher's role ("C" below).

B. Principles of teaching

1. Create an environment and an atmosphere in which children will be active and initiate their own activities. In the final analysis, it is the quality of the environment the teacher creates, including teacher-child and child-child relationships, that either promotes or retards development. Good teaching is a very indirect art and results from sensitivity to children as well as theoretical knowledge.

2. How to introduce an activity

   a. Put out the materials, encourage children to do everything they can with them, and observe what they do (observe what schemes they apply to the objects).

   b. When children have exhausted their own ideas, model or suggest an activity so that it flows into the children's play in a natural way.

   c. Tune in and pick up on children's reactions rather than trying to impose the teacher's predetermined goals.

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3. With regard to social-arbitrary knowledge, tell the right answer and reinforce it. In physical knowledge, encourage the child to find the answer directly from objects. In logico-mathematical knowledge, refrain from telling the right answer or reinforcing it. The "pasting on" of logico-mathematical knowledge tends to confuse the child and make him unsure of his own opinions. Certainly, the teaching of the correct answer cannot result in any genuine construction of logico-mathematical structures.

4. Let the preoperational child go through many stages of being "wrong". If we want children to achieve formal operations, we must let them construct their own preoperational knowledge rather than trying to give them our ready-made, adult knowledge.

5. View all aspects of knowledge as being inseparable. Piaget insists that although he delineated physical and logico-mathematical knowledge for theoretical reasons, in the child's psychological reality knowledge exists as an inseparable whole. (See "III. A typical activity" for an elaboration of how this principle works in the classroom.)

C. The role of the teacher

The following functions of the teacher parallel the principles of teaching listed above.

1. Creator of an environment and an atmosphere conducive to learning. By "an atmosphere conducive to learning," we mean an atmosphere in which the child uses his own initiative in pursuing his interests, says exactly what he thinks, asks questions, experiments, and comes up with a variety of ideas.

2. Presenter of materials, suggester of activities, and assessor of

what is going on inside the child's head from moment to moment. By watching what the child does and says, a teacher well acquainted with the child and with Piaget's theory can gain many insights which are otherwise not possible.

3. Responder. The teacher interacts appropriately with the child in terms of the kind of knowledge the child is constructing (see third principle of teaching above) and shares in the child's pleasure, frustration, disappointment, etc., when the child wants to include the teacher in his activity.

4. Extender of children's ideas. Without intruding or interrupting, the teacher interacts with children in such a way as to encourage the extension of their ideas.

III. A typical activity: "Rollers"

Materials: Dowell rods cut into 16" lengths and varying in diameter (e.g., 1/2", 1", 1-1/2", and 2"). About 25 of each size.

Boards of different widths (e.g., 10" and 14") and lengths (e.g., 2', 3', and 4').

Cartons large enough to ride in

Procedure: Our basic idea was to have children ride boards placed on rollers ( o o o o o o o o o o o o o o o) and race to get from one end of the rug to the other. To figure out how to win this race, children have to think about (a) the rollers which work best (best diameter), (b) the board which works best (width and length), (c) the best number of rollers to use and distance between them, and (d) whether to lie, sit, kneel, or stand on the board.

Although we had in mind this end-point activity, this was

not our primary objective. Our main objective was to encourage children to construct the kind of knowledge which would make such a race easy for them. This meant that we were interested in seeing children pursue their spontaneous ideas regarding the use of the materials.

The children did many different things when given the materials and encouraged to do whatever they wanted to do. Some of the things they did are described below under the heading "Rationale". (We will bring slides of the various things the children did.)

Rationale: This activity is first of all based on Piaget's idea of physical knowledge. (Children act on objects and see how objects react.) The materials also offer the following possibilities:

a. Comparing the diameters of the rods, the widths and lengths of the boards, and their effects on how the ride feels; also comparing numbers when one child says to another, "You've got more than I have!"

These kinds of comparisons (enriching the objects by introducing relationships onto them) are examples of reflective abstraction in logico-mathematical knowledge.

b. Structuring space

For example, children stood some rollers up in a line as shown in the drawing, aimed a roller at them, and rolled it to knock down the ones that were standing. They found out that the way in which they rolled the roller with either one hand or both hands made a difference to the path the roller followed.